

REMARKS

This responds to the Office Action mailed on June 17, 2005. Claims 1-5, 14, 16-17, 19, 27, 32, 47, 54, 57-58, 62-67, 75-78, 80, 82-83, 85-87, are amended. Claims 13, 15, 55-56, 73-74, are canceled. Claim 90 is added. As a result, claims 1-12, 14, 16-54, 57-72, and 75-90 are now pending in this application.

As in initial note, to the extent that any cited reference relied on can be overcome as provided under 37 C.F.R. § 1.131, Applicant reserves the right to swear behind these references as provided under 37 C.F.R. § 1.131.

§103 Rejection of the Claims

1. Claims 1-7, 9-11, 13-16, 26-33, 38-46, 54-57, 59-67, 69 and 73-81 were rejected under 35 U.S.C. § 103(a) for obviousness over Shapiro et al. (U.S. 2003/0014405 A1) (Shapiro) and Neal et al. (U.S. 6,324,534) (Neal). Applicant respectfully traverses.

Concerning claims 1-7, 9-11, 14, 26, 43-46, and 61:

Applicant respectfully submits that no *prima facie* case of obviousness presently exists because the cited portions of Neal and/or Shapiro do not disclose, teach, or suggest, all elements of independent claim 1. For example, Applicant cannot find any disclosure, teaching, or suggestion in the cited portions of these references of classifying a user query into a query class and then selecting a search strategy based the query class in which the user query is classified, as presently recited in claim 1, and similarly recited in claims 43, 61, and 79. In one example, queries are classified by their length (*See* Application at page 32, lines 10-15). In this example, the resulting query classification maps the query to a set of one or more searches to be performed on the user's query. (*See* Application at pages 32-38). In contrast, none of the references cited disclose this. While Neal mentions a possible series of searches, the series apparently is not related to the type or length of the query, or to any type of automatic query classification. Instead of analyzing the query, the system manager seeks to employ "the most efficient business strategy" to manually determine the order of the searches (*See* Neal at col. 7, line1). Furthermore, Shapiro apparently describes alternative methods of searching using the same query, but Shapiro gives no indication of how either alternative is chosen over the other (*See*

Shapiro ¶ 27).

Moreover, Neal actually expressly teaches away from Applicant's claimed "evaluating a first search result returned by the first search to determine whether to perform a subsequent search using at least one different search criteria from the set of search criteria," as recited in claim 1, and similarly recited in claims 27, 54, and 63. Neal apparently describes an iterative searching algorithm that terminates after the first match is discovered (*See* Neal at col. 8, lines 6-8; col. 9, lines 39-40; col. 10, lines 51-52). Neal expressly emphasizes that such immediate termination is preferred in an effort to "sav[e] the computing resources from needless searches through the remaining data set." (*See* Neal at col.3, line 42-45). In contrast, Applicant's claims provide a search that may not terminate upon the finding of at least one match. In certain examples, Applicant's decision to terminate is dependent on factors such as the likelihood of further relevant matches (*see* Application at page 19, lines 16-24), whether a threshold value has been reached (*see id.* at page 15, lines 1-19), whether a timeout value has been reached (*see id.* at page 16, lines 1-9), or other intelligent factors (*see id.* at page 15, lines 20-30). By allowing the search to continue, the present system advantageously finds the most relevant information by using successively tailored searches.

Thus, because the cited portions of the references do not disclose, teach, or suggest all of the elements of claims 1-7, 9-11, 14, 26, 43-46, and 61, and further because Neal actually teaches away from certain claim elements of claim 1, Applicant respectfully requests withdrawal of this basis of rejection of these claims. For brevity, Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

Concerning claims 6, 39, and 56:

Moreover, Applicant respectfully submits that no *prima facie* case of obviousness exists with respect to these claims because the cited portions of the cited references do not disclose, teach, or suggest the claimed elements in claims 6, 39, and 56. For example, Applicant cannot find "ranking of a particular document ... based at least in part on which performed search returned that particular document" in the cited portions of the cited references. The present patent application describes a weighting of a search result based on which search found that

result (*see* Application at page 12, lines 1-3; page 14, lines 10-13). For example, a search result obtained from a search for an exact string match will be ranked higher than a result from a near proximity or synonym search. (*see* Application at page 23, line 29 - page 24, line 1). In contrast, Neal apparently merely suggests ranking by the degree to which a particular document returned by a particular search satisfied the query language (*see* Neal at col. 7, lines 50-53).

Therefore, because the cited portions of the cited references do not disclose, teach, or suggest all of the elements of claims 6, 39, and 56, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Concerning claim 16:

Applicant respectfully submits that no *prima facie* case of obviousness presently exists with respect to claim 16 because the cited portions of Neal and/or Shapiro do not disclose, teach, or suggest “classifying the user query [including]: parsing the user query into information - bearing terms, based at least in part on any noninformation-bearing stopwords included in the user query; and classifying the user query into a query class based on at least one of: how many information-bearing terms are obtained from the user query; and how many words are included in the information-bearing terms obtained from the user query.”

First, as discussed above, neither Neal nor Shapiro disclose, teach, or suggest the use of query classes. While both references apparently show the use of multiple queries executed in some sequence, the queries are not grouped into classes. Furthermore, any sequence of queries described in these references are apparently not executed in response to the type, length, or some other characteristic of the input query – they are apparently merely executed by rote methodology.

Therefore, because the cited portions of the references do not disclose, teach, or suggest all of the elements of claim 16, Applicant respectfully requests withdrawal of this basis of rejection of this claim.

Concerning claims 27-33, 38, and 40-42:

Applicant respectfully traverses this rejection. Applicant submits that no *prima facie* case of obviousness presently exists with respect to these claims because the cited portions of

Neal and/or Shapiro do not disclose, teach, or suggest all of the claimed elements in the independent claim 27 as presently recited. For example, Applicant cannot find any disclosure, teaching, or suggestion of “using an ordered list, S1, S2, . . . , SN, of at least two searches, each search using at least one search criteria that is different from the other searches, the search criteria selected from a multidimensional set of automatically generated search criteria, the set of search criteria including at least two different dimensions representing different approaches of varying search specificity” in the cited portions of these references. The present specification explains in detail how a user query is received as input by a query generator and then a set of search criteria is automatically compiled and passed to the search engine for evaluation and possible execution (*see* Application at page 11, lines 16-20). The present query generator is intelligent. In certain examples, it automatically creates the set of search criteria based on one or more factors including: the dialog with the user; using taxonomies or other organizational structure of the knowledge corpus; or a particular user’s access privileges (*see* Application at page 12, lines 6-19; *see also* Application at pages 10, line 17 to page 11, line 4). Furthermore, the specification discloses in other examples a query generator that uses “on the fly” creation and reordering of an ordered list of searches (*see* Application at page 31, lines 22-25). In addition, the queries are generated along multiple dimensions (e.g., both a textual and document dimension, *see* Application at page 12, lines 19-30). This advantageously produces faster searches that return more relevant results.

This type of automatic query generation is not easily achieved. As evidenced by the references cited, even generating queries along one dimension is difficult. Neal apparently discloses a procedure where an apparently human “system manager” establishes the hierarchy of the data sets, determines which order they will be searched, and pre-selects the search methodology to attempt to find the best match (*see* Neal at col. 3, lines 40-42; col. 4, lines 50-52; col. 6, line 66 to col. 7, line 4; col. 7, lines 15-17). Shapiro is apparently only slightly more automated. Shapiro apparently uses “a set of short queries” generated from substrings of the original query string (*see* Shapiro at para. 27-29). However, this type of query generation is unintelligent, the queries generated are merely permutations of the input user query and again, only over one dimension. Finally, Cragun et al. (Cragun) apparently discloses the possible use of a search expression that may include one or more weight criteria (*see* Cragun ¶ 13). However,

Cragun apparently only employs the user to create these search weights manually (*see* Cragun ¶¶ 33-34). Automated generation of these types of search criteria would be difficult because of the highly personal nature of the weighting – what one user may deem important may be entirely different from what another user may deem important.

Therefore, because the cited portions of these references apparently do not disclose, teach, or suggest all of the elements of claims 27-33, 38, and 40-42, and furthermore, because would not have been obvious to combine certain elements from the references to achieve the language of claim 27, Applicant respectfully requests withdrawal of this basis of rejection of these claims. For brevity, Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

Concerning claims 54, 57, 59-60, 62-67, 69, 75-78, and 80-81:

Applicant respectfully traverses this rejection. Applicant submits that no *prima facie* case of obviousness presently exists with respect to these claims because the cited portions of Neal and/or Shapiro do not disclose, teach, or suggest all of the claimed elements presently recited in independent claim 27. Applicant cannot find in the cited portions of these references any disclosure, teaching, or suggestion of “search criteria selected from an automatically generated set of search criteria” as presently recited in claim 54 and similarly recited in claim 63. As discussed above, with respect to claims 27-33, 38, and 40-42, this type of intelligent automatic query generation is not taught or suggested by these references.

Additionally, Applicant cannot find in the cited portion of these references “a result ranking engine, coupled to the search engine output to rank documents returned in at least one search result, in which the result ranking engine includes an output user interface, in which the result ranking engine ranks a particular document based at least in part on which search returned that particular document” as presently recited in claim 54, and similarly recited in claim 63. As discussed above, Neal apparently merely ranks by the degree to which a particular document returned by a particular search satisfied the query language (*see* Neal at col. 7, lines 50-53) without any inquiry as to which particular search returned the result.

Therefore, because the cited portions of these references apparently do not disclose, teach, or suggest all of the elements of claims 54, 57, 59-60, 62-67, 69, 75-78, and 80-81, and

furthermore, because would not have been obvious to combine certain elements from the references to achieve the language of these claims, Applicant respectfully requests withdrawal of this basis of rejection of these claims. For brevity, Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

2. Claims 8, 12 and 58 were rejected under 35 U.S.C. § 103(a) for obviousness over Shapiro and Neal and further in view of Russell et al. (U.S. 6,598,047) (Russell).

Applicant respectfully traverses this rejection for the reasons stated above with respect to their independent claims 1 and 54 because the cited portions of Russell apparently do not include the missing claim elements, as discussed above.

Furthermore, concerning claim 12, Applicant cannot find in the cited portion of Russell any disclosure, teaching, or suggestion of “determining the scheme in which the search ordering is traversed [including] using an approximately binary divide-and-conquer traversal of the search ordering.” For example, the present patent application expressly details a process to traverse the search list by evaluating whether a given search has returned too many or too few results. The searching process starts with a search from the search list that is approximately in the middle of the list when the list is ordered from general to specific. If the search returns too few results, then a broader search is used next. If the search returns too many results, then a narrower search is used. The search process then chooses a search in the approximate middle of the new sub-range of searches from the remaining relevant half of the ordered search list. (*see* Application at page 27, lines 9-27). In contrast, Russell apparently discusses a division of the search domain so that each “expert node” is associated with a “concept node.” The concept node digests the input information and separates out concepts to either pass to another concept node or to be evaluated by an expert node. (*see* Russell at col. 5, lines 40-60). This type of division is not binary, and furthermore, it is not a division of a list of searches, but rather constitutes a division of the input user query. For these reasons, the technology disclosed in Russell apparently does not have any bearing on the present patent application.

Because Applicant cannot find all elements of these claims in these references, Applicant respectfully requests withdrawal of this basis of the rejection of these claims. For brevity,

Applicant defers (but reserves the right to present) further remarks concerning these dependent claims, which are believed separately patentable in light of the related independent claims as currently presented.

3. Claim 86 was rejected under 35 U.S.C. § 103(a) for obviousness over Shapiro and Neal and Dogpile (web.archive.org, 1996) and further in view of Russell.

Applicant respectfully traverses this rejection for the reasons stated below with respect to their independent claim 82 because the cited portions of Dogpile apparently do not include the missing claim elements. Furthermore, as discussed above, because Applicant cannot find in Russell or the other cited references “moving through the list [of searches] in an at least approximately binary strategy that divides a portion of the ordered list to be searched into two segments and selects a particular segment of the ordered list based on an evaluation of the search results,” Applicant respectfully requests that this basis of rejection be withdrawn.

For brevity, Applicant defers (but reserves the right to present) further remarks concerning this dependent claim, which is believed separately patentable in light of the related independent claim as currently presented.

4. Claims 34, 68, 82, 85 and 87-89 were rejected under 35 U.S.C. § 103(a) for obviousness over Shapiro and Neal and further in view of Dogpile.

Concerning Claims 34 and 68:

Applicant respectfully traverses this rejection for the reasons stated above with respect to their independent claims 27 and 63 because the cited portions of these references apparently do not include the missing claim elements discussed above.

Moreover, Applicant respectfully submits that no *prima facie* case of obviousness presently exists with respect to these claims because all elements are not present in Dogpile or the other references. For example, Applicant cannot find any disclosure, teaching, or suggestion “in which specificity of the search criteria varies along at least two of a textual dimension, a linguistic dimension, and a thesaurus dimension” in Dogpile, either alone, or in any combination with other cited references. The current application discloses searching using of one or more

dimensions of a query string. Examples of this multi-dimensional searching include using two or more of proximity, case variation, synonym usage, and Boolean combinations. (*see* Application at pages 16-25). In contrast, Dogpile apparently merely discloses the possible use of one or more databases or content sources (e.g., the WWW, Usenet, or FTP) in a search. The use of multiple content sources merely involves (at best) one dimension and is not the multi-dimensionality that Applicant's claims provide.

Therefore, because Applicant cannot find all elements of claims 34 and 68 in the cited portions of Dogpile, alone or in combination with Neal and/or Shapiro, Applicant respectfully submits that no *prima facie* case of obviousness presently exists with respect to these claims. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Concerning claims 82, 85, and 87-89:

Applicant cannot find in the cited portions of Neal any disclosure, teaching, or suggestion of "evaluating search results corresponding to the search performed to determine whether to perform a subsequent search and, if the evaluation deems the search results insufficient, then moving to and performing another search." In fact, Applicant respectfully submits that Neal expressly teaches away from this behavior by terminating a series of searches if a result is found, as discussed above.

Additionally, Applicant cannot find any disclosure, teaching, or suggestion in the cited portions of Neal of "using an automatically generated ordered list of S1, S2, . . . , SN searches" as presently recited in claim 82. As discussed above, the cited portions of Neal apparently disclose a user-driven model, not an automatically generated ordered list of searches. While Shapiro apparently discloses some type of systematic query generation, absent of any intelligence, and Cragun apparently mentions a method of searching that arguably could span multiple dimensions, Shapiro does not disclose, teach, or suggest that the systematic query generation could be performed over more than the single textual dimension and Cragun does not disclose, teach, or suggest that multi-dimensional searching could be performed with automatically generated search queries.

Therefore, because Applicant cannot find all elements of claims 82, 85, and 87-89 in the

cited portions of Dogpile, in combination with Neal and/or Shapiro, and because the Office Action has provided no motivation to combine these references, Applicant respectfully submits that no *prima facie* case of obviousness presently exists with respect to these claims. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

For brevity, Applicant defers (but reserves the right to present) further remarks concerning any dependent claims, which are believed separately patentable in light of the related independent claim as currently presented.

Concerning claim 87:

Furthermore, as discussed above with respect to claim 1, Applicant cannot find any disclosure, teaching, or suggestion of query classes in these references. The use of query class as a set of one or more searches tailored for a particular user query is not the same as a manually provided list of searches (Neal) or a automatically generated rote list of queries (Shapiro). Thus, because Applicant cannot find all elements of claim 87 in these references, Applicant respectfully requests withdrawal of this basis of rejection of claim 87.

5. Claims 35-37, 47-53, and 70-72 were rejected under 35 U.S.C. § 103(a) for obviousness over Shapiro and Neal and further in view of Cragun et al. (U.S. 2003/0055810) (Cragun).

Concerning claims 35 and 70:

Applicant respectfully submits that no *prima facie* case of obviousness exists with respect to these claims because the cited portions of Cragun do not disclose, teach, or suggest “search criteria that [specifies] at least one predefined portion of the documents to be used in carrying out the search.” Cragun apparently allows the user to compile a search based on one or more factors with a search term location only being one of them (*see* Cragun ¶ 12, lines 10-13). Other available “weight criteria” include “format of the one or more search terms, and a frequency count of the one or more search terms.” (*see* Cragun ¶ 12, lines 10-13). The user is not required to use any certain weight – term location, format, or frequency count – in any specified restricted manner. This behavior is distinctly different than the language in claims 35 and 70, which recite

the use of “at least one predefined portion of the document[.]” Thus, because Applicant cannot find all elements of claims 35 and 70 in these references, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Concerning claims 36-37 and 71-72:

As discussed above with respect to claim 28, Applicant cannot find any disclosure, teaching, or suggestion of “using an ordered list, S1, S2, . . . , SN, of at least two searches, each search using at least one search criteria that is different from the other searches, the search criteria selected from a multidimensional set of automatically generated search criteria, the set of search criteria including at least two different dimensions representing different approaches of varying search specificity” in the cited portions of these references. Furthermore, as discussed above, Applicant respectfully submits that this type of automatic query generation is not found in any cited reference and not easily achieved. Therefore, because Applicant cannot find all elements of claims 36-37 in the cited portions these references, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Moreover, as discussed with respect to claim 63, Applicant cannot find in the cited portions of these references any disclosure, teaching, or suggestion of “search criteria selected from an automatically generated set of search criteria” as presently recited. Additionally, Applicant cannot find in the cited portion of these references “a result ranking engine, coupled to the search engine output to rank documents returned in at least one search result, in which the result ranking engine includes an output user interface, in which the result ranking engine ranks a particular document based at least in part on which search returned that particular document” as presently recited in claim 63. As discussed above, Neal merely ranks by the degree to which a particular document returned by a particular search satisfied the query language (Neal at col. 7, lines 50-53) without any inquiry as to which search returned the result. Therefore, because Applicant cannot find all elements of claims 71-72 in the cited portions these references, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Concerning claims 47 and 51-53:

First, Applicant cannot find any disclosure, teaching, or suggestion in Dogpile or in any

combination with cited references of “using an automatically generated ordered list of S1, S2, . . ., SN searches, the searches using search criteria taken from a plurality of dimensions, each dimension including a plurality of search criteria ranging from approximately more specific to approximately more general, the plurality of dimensions including at least two different dimension representing different approaches of varying search specificity.” As discussed above, the process of partitioning a search query and a search content domain are completely separate ideas and Applicant cannot find any suggestion or motivation to use Dogpile with any cited reference to leap from one concept to the other.

Second, Applicant cannot find any disclosure, teaching, or suggestion of “evaluating search results corresponding to the search performed to determine whether to perform a subsequent search and, if the evaluation deems the search results insufficient, then moving to and performing another search in the” in the cited portions of Neal. In fact, as discussed above, Applicant respectfully argues that Neal teaches away from this behavior by terminating a series of searches if a result is found.

Finally, Applicant cannot find any disclosure, teaching, or suggestion in the cited portions of Neal of “using an automatically generated ordered list of S1, S2, . . ., SN searches” as presently recited in claim 47. As discussed above, the cited portions of Neal apparently disclose a user-driven model.

Therefore, because Applicant cannot find all elements of claims 47 and 51-53 in the cited portions these references, Applicant respectfully submits that no *prima facie* case of obviousness presently exists with respect to this claim. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

For brevity, Applicant defers (but reserves the right to present) further remarks concerning any dependent claims, which are believed separately patentable in light of the related independent claim as currently presented.

Concerning claim 48:

Applicant respectfully traverses this rejection because, as discussed above with regard to claims 54 and 63, all elements of claim 48 (which are equivalent to the pertinent elements found in claims 54 and 63) could not be found in the cited portions of these references. Thus,

Applicant respectfully requests withdrawal of the basis of this rejection from this claim.

Concerning claim 49:

Additionally, Applicant cannot find in the cited portions of these references “the ranking of a particular document is based at least in part on a degree to which a particular document satisfied the search criteria associated with the at least one performed searches that returned that particular document.” As discussed above, Neal merely ranks by the degree to which a particular document returned by a particular search satisfied the query language (Neal at col. 7, lines 50-53) without any inquiry as to which search returned the result. Therefore, because Applicant cannot find all elements of claim 49 in the cited portions these references, Applicant respectfully requests withdrawal of this basis of rejection of this claim.

Concerning claim 50:

Applicant cannot find in the cited portion of these references “ranking of a particular document [] based at least in part on a weight with which the particular document is associated with a particular concept node.” Although Russell apparently discloses concept nodes, their use is to deconstruct a query and pass portions of the query to “conceptual” and “expert” nodes. This use is not related to ranking documents using weighting associated with concept nodes. Therefore, because Applicant cannot find all elements of claim 50 in the cited portions these references, Applicant respectfully requests withdrawal of this basis of rejection of this claim.

6. Claims 83-84 were rejected under 35 U.S.C. § 103(a) for obviousness over Shapiro and Neal and Dogpile and further in view of Cragun.

Applicant respectfully traverses this rejection because Applicant cannot find in these cited references an “ordered list [which] is ordered according to a varying specificity along each particular dimension while holding specificity of other dimensions constant” as recited in claim 83. As explained in the present application, one example includes three search lists, each ordered from a more specific specificity to a more general specificity, along three distinct dimensions. The current search being executed can be represented by the notation S_{ijk} , where i is the search index of the first dimension of x arranged searches, j is the search index of the second

dimension of y arranged searches, and k is the search index of the third dimension of z arranged searches. The example executes searches along the first dimension ($S_{111}, S_{211}, \dots, S_{m11}$) until either the search returns a result list that exceeds a certain minimum threshold or the x searches in the search list are exhausted. If the search list is exhausted in the first dimension, then the searching will continue with the next most general search in the second dimension, S_{x21} , and continue to the last search in that dimension. The searching will continue in this fashion until either a search result is returned that is within a certain threshold or the search lists are exhausted. E.g. $S_{x21}, S_{x31}, \dots, S_{xy2}, S_{xy3}, \dots, S_{xyz}$. (see Application pages 24-27).

In contrast, Applicant cannot find any disclosure, teaching, or suggestion in the cited portions of these references of a multi-dimensional search that is executed in this manner. Therefore, Applicant respectfully requests withdrawal of this basis of rejection for claim 83.

Moreover, Applicant cannot find in the cited portions of these references “each search in the ordered list [including] a criteria from each dimension.” Cragun apparently discloses searches that can span multiple dimensions, however these searches are not arranged in an ordered list and furthermore, each search does not include criteria from each dimension. Instead, Cragun discloses a disjunctive association between the search dimensions available – apparently, a user may use one or more of the search dimensions in whichever combination is found most suitable (Cragun para. 13). Therefore, because Applicant cannot find all elements of claim 84 in these cited references, Applicant respectfully requests withdrawal of the basis of this rejection for claim 84.

Allowable Subject Matter

Claims 17-25 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant acknowledges the allowability of claims 17-25 if rewritten to incorporate the elements of their base claims and reserves the right to rewrite such claims accordingly.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6951 to facilitate prosecution of this application.


If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

MAX COPPERMAN ET AL.

By their Representatives,

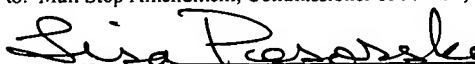
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